Current Clinical Perspective on Lymphedema Diagnosis & Treatment

Physiologic Benefit and Clinical Outcomes

Presented by:
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Disclosures

- Spectranetics - Speakers’ Bureau
- Tactile Medical - Speakers’ Bureau
- Volcano Corp. - Speakers’ Bureau
Primary lymphedema prevalence occurs in ~1:10,000 individuals\textsuperscript{1}

Secondary lymphedema affects up to 5 million people in the U.S. alone\textsuperscript{2}

Secondary lymphedema occurs in up to 45% of breast cancer patients\textsuperscript{3}

- Risk of lymphedema for patients increases each year post cancer treatment

Incidence of cancer-related lymphedema increased 31% from 2007 to 2013\textsuperscript{4}

Other common causes of secondary lymphedema include chronic venous insufficiency, obesity, & trauma

Co-morbidities (e.g., loss of mobility & function, infection and/or psychological impacts) also significantly increase the clinical impact of lymphedema and associated health costs

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• Lymphedema is caused by a failure of the lymphatic system to adequately accept and transfer fluid into the central circulation.
  – May be due to idiopathic (primary) or acquired (secondary) lymphatic disease.

• Lymphedema occurs when excessive fluid and protein accumulate in the interstitial spaces.

• Lymphedema is a chronic (lifelong) disease.
Recognizing the Signs of Lymphedema

- Positive Stemmer’s sign
- Swollen and squared off toes
- “Orange peel” skin changes
- Swelling of dorsum of foot (“buffalo hump”)
- Hyperkeratosis
- Papillomatosis
- Lymphorrhea
- Cutaneous and subcutaneous fibrosis
- Swelling – pitting in early stages; non-pitting in middle to late stages
- Hypoplastic and concave toenails
Complete Decongestive Therapy (CDT) Treatment for Lymphedema Management

**Phase I – Intensive In-Clinic**
- Decongest/reduce volume
- Daily treatments
  - Manual lymph drainage (MLD)
  - Compression bandaging
  - Exercise
  - Skin & nail care / precaution
  - Patient education in self-care
- Duration: 2-4 weeks

**Phase II – Self-Care**
- Maintain reduction / minimize progression
- Ongoing therapy
  - Compression garments
  - Bandaging
  - Self-MLD
  - Pneumatic compression device (PCD)
  - Exercise
  - Skin & Nail Care
- Duration: lifetime

Which Phase II therapies are appropriate for which patients?
Complete Decongestive Therapy (CDT) Outcomes

• CDT has demonstrated effectiveness
  – Up to 80% of patients maintain benefit\(^5\)

• Lack of patient compliance can reduce CDT efficacy
  – Time and cost burden associated with ongoing treatment
  – Physical demands of self-MLD may be difficult

Goals For Successful Phase II Lymphedema Self-Care

1. Support sustained clinical benefits of Phase I clinic-based CDT regimen

2. Improve or sustain patient quality of life

3. Reduce the clinical and financial burden on the patient and health system
How Can Clinicians and Patients Best Select a Lymphedema Strategy of Care?

- Evidence of efficacy and safety
- Access and availability
- Cost and insurance
- "Clinical Tradition" (wisdom)
- Patient preferences

These vary by patient and healthcare professional, geographic region and insurer. These factors also contribute to treatment and outcome variability.
Early Pneumatic Compression Devices (PCD): The Simple PCD

- First used for lymphedema treatment in the 1970’s

- Shortcomings of early PCDs
  - Few inflation chambers
  - Lack of truncal clearing
  - “Press and hold” vs. “work and release”
  - High treatment pressures\(^7\)
  - Treatment sessions up to 24 hours

- Limited clinical efficacy

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Do advancements in PCD technology improve both health & health economic outcomes for patients?

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New Technology: Flexitouch® System: A Clinically Proven Advanced PCD Therapy

- Up to 32 curved chambers direct fluid away from affected areas toward healthy lymph nodes
- Delivers low pressure through gentle “work and release” mechanism of action
- Offers truncal clearance, followed by distal to proximal treatment of limbs
- Demonstrated high patient compliance & satisfaction

Flexitouch is the only PCD clinically proven to stimulate the lymphatic system

Not all PCDs are the same: The physiologic mechanisms applied are distinct

**Flexitouch System vs. other PCDs**

- Truncal stimulation + extremity stimulation
- Mild, dynamic pressure delivered in 1-3 second intervals
- Gentle “work and release” action

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**Flexitouch System**

“Work and Release”

**Traditional PCD**

“Press and Hold”

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- Extremity stimulation only
- High pressure delivered over longer periods of time
- “Press and hold” action

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PCD Use Improves Health and Lowers Cost

PCD Use Achieves:

- Rate of Cellulitis infections decreased 21%
- Reduction in Rate of Physical Therapy Visits 18%
- Reduction in Rate of Outpatient Visits 5%
- Reduction in Rate of Hospitalization 29%

Healthcare costs decreased $11,333

PCD use improves clinical outcomes and reduces healthcare costs in cancer-related lymphedema patients

Patient Presentation:
• Chronic lymphedema since 1975
• Presented in 2009 with Stage 2 lymphedema
  – Initial clinic results were successful
  – Could not continue maintenance at home after discharge
  – Co-morbidities: Hypertension, atrial fibrillation, history of pulmonary embolism

Treatment:
• Patient prescribed Flexitouch for 1 hour per day
  – Additional in-clinic treatment
  – Daily lymphedema exercises

Results:
• Right leg volume reduction = 29%, Left leg = 14%
• Resumption of daily activities following treatment:
  – Able to don shoes with a reacher
  – Stand in the shower
  – Stand to wash dishes
  – Go to the grocery store
  – Attend church
Patient Presentation:
• Severe Stage 3 lymphedema
  – Co-morbidities: Obesity & Hypertension

Treatment:
• Flexitouch 1x-2x per day
  – Personal trainer at the gym
  – Physical therapist for skin care, bandaging and patient education

Results (6 mo. into treatment):
• 73% reduction in limb volume
  – No macerated skin in the crease of the ankle
  – Fibrosis softened throughout the leg
  – Decrease of chronic erythema
• Patient feels treatment “exceeded her expectations”
When patients, physicians, and therapists work as a team, the impact of lymphedema is lowered, function & quality of life improved, and health is maintained.
The PCD provides adjustable, gradient, sequential compression therapy for:

- Primary & secondary lymphedema
- Post mastectomy edema
- Edema following trauma and sports injuries
- Post immobilization edema
- Venous insufficiencies
- Reducing wound healing time
- Treatment and assistance in healing stasis dermatitis, venous stasis ulcers, or arterial and diabetic leg ulcers

Contraindications include:

- Pulmonary edema
- Thrombophlebitis
- Congestive heart failure
- Deep vein thrombosis
- Episodes of pulmonary embolism
- Infections and inflammations
- Acute cancer
- The Trunk accessory should not be used during pregnancy.

Conclusions

• Lymphedema is a chronic disease process that requires a team oriented approach.

• The timely recognition and treatment of lymphedema demonstrates improved clinical results, reduces healthcare costs and delivers high patient compliance & satisfaction.

• Advances in PCD technology may help enhance and sustain the clinical and economic benefits of CDT.
Thank you

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